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(54) RESOLVENT COMPOSITION FOR SPARINGLY SOLUBLE MEDICINE

(57)Abstract:

PURPOSE: To obtain the subject composition, composed of a polyhydric alcohol ester of a medium-chain fatty acid, excellent in percutaneous absorbability, stability, solubility and simplicity without any irritation and useful for an antipyretic, antiinflammatory and analgesic agent such as mefenamic acid.

CONSTITUTION: The objective composition is composed of (A) a polyhydric alcohol ester of a medium-chain fatty acid which is an ester of glycerol, ethylene glycol, propylene glycol or polyglycerol with a 6-12C fatty acid, preferably (A) the ester and (B) water. Furthermore, the blending ratio (A/B) of the ingredients (A) with (B) is preferably (50/50) to (90/10).

CLAIMS

1. A resolvent composition for sparingly soluble medicines, comprising polyhydric alcohol-type fatty acid ester.

2. A resolvent composition for sparingly soluble medicines, comprising polyhydric alcohol-type fatty acid ester and water.

3. The resolvent composition according to claim 1 or 2, wherein the polyhydric alcohol-type fatty acid ester is a fatty acid ester having 6 to 12 carbon atoms, selected from glycerin, ethylene glycol, propylene glycol, and polyglycerin.

4. The resolvent composition according to claim 1 or 2, wherein polyhydric alcohol-type fatty acid ester is a fatty acid ester having 6 to 12 carbon atoms selected from 1,3-butylene glycol, diglycerol, diethylene glycol, polyethylene glycol, dipropylene glycol, polypropylene glycol, sorbitan, sorbitol, isosorbide, methyl glucoside, oligosaccharide, and reducing oligosaccharide.

5. The resolvent composition according to any one of claims 1 to 4, wherein the resolvent composition is used to dissolve an anti-febrile and anti-inflammatory agent.

6. The resolvent composition according to claim 1, wherein the resolvent composition is composed of at least one oil ingredient having the polarity, selected from lactic acid alkyl ester, dibasic acid alkyl ester, polyhydric alcohol alkyl ether, acylated amino acid, fatty alcohol, fatty acid.

7. The resolvent composition according to claim 6, wherein the resolvent composition is composed of water and an oil ingredient having the polarity.

8. The resolvent composition according to claim 6 or 7, wherein a part of ingredient having the polarity is substituted with the polyhydric alcohol-type fatty acid ester.

9. The resolvent composition according to claim 2 or 7, wherein the water is substituted with a buffer solution.

10. The resolvent composition according to claim 6 or 7, wherein the lactic acid alkyl ester is ester of lactic acid and fatty alcohol having 4 to18 carbon atoms.

11 The resolvent composition according to claim 6 or 7, wherein the dibasic acid alkyl ester is ester of adipic acid, sebacic acid, and methanol, ethanol and isopropanol.

12. The resolvent composition according to claim 6 or 7, wherein the polyhydric alcohol alkyl ether is a fat alkyl ether having 6 to 12 carbon atoms, selected from glycerin, ethylene glycol, propylene glycol, 1,3-butylene glycol, diglycerol, Polyglycerin, diethylene glycol, polyethylene glycol, dipropylene glycol, polypropylene glycol, sorbitan, sorbitol, isosorbide, methyl glucoside, oligosaccharide, and reducing oligosaccharide.

13. The resolvent composition according to claim 6 or 7, wherein the acylated amino acid is a fatty acyl compound having 6 to 12 carbon atoms, selected from glycine, an

alanine, valine, leucine, isoleucine, Serine, threonine, phenylalanine, tyrosine, tryptophan, Cystine, cystein, methionine, proline, hydroxyproline, aspartic acid, glutamic acid, asparagine, glutamine, arginine, histidine, and lysine.

14. The resolvent composition according to claim 6 or 7, wherein the fatty alcohol is linear alcohol having 8 to 22 carbon atoms, side-chain alcohol having 8 to 22 carbon atoms, and unsaturated alcohol having 8 to 22 carbon atoms.

15. The resolvent composition according to claim 6 or 7, wherein the fatty acid is straight fatty acid having 8 to 22 carbon atoms, side-chain fatty acid having 8 to 22 carbon atoms, and unsaturated fatty acid having 8 to 22 carbon atoms.

16. The resolvent composition according to any one of claims 6 to 15, wherein the resolvent composition is used to dissolve an anti-febrile and anti-inflammatory agent.

17. The resolvent composition according to claim 5 or 16, wherein the resolvent composition is transparent.

18. The resolvent composition according to claim 5 or 16, wherein the resolvent composition is in the form of gel.

19. The resolvent composition according to claim 5 or 16, wherein the anti-febrile and anti-inflammatory agent is at least one selected from mefenamic acid, dichlofenac sodium, flufenamic acid, Aspirin, sodium salicylate, choline salicylate, Sari Chilo salicylic acid,

Sulpyrine, alclofenac, ibuprofen, naproxen, flurbiprofen, Ketoprofen, fenbufen, tinoridine hydrochloride, benzydamine hydrochloride, Tiaramide hydrochloride, perisoxal citrate, chloride diphenyl dimethyl aminoethane, Indomethacin, ergotamine tartrate, tramadol hydrochloride, TORIMECHIN sodium, Dimetotiazine mesilate, metiazinic acid, protizinic acid, clidanac, Sulindac, niflumic acid, pranoprofen, aspirin DL-lysine, KUSHIN, fan CHIAZAKU, BENZA drug, fenoprofen calcium, piroxicam, and glycyrrhetinic acid.

20. The resolvent composition according to any one of claims 5 or 16 to 19, wherein the anti-febrile and anti-inflammatory agent is further blended with at least one selected from silicone oil, lower alcohol, water-soluble polymer, inorganic powder, organic granule, a surfactant, an absorption enhancer, a chelating agent, an anti-oxidant, and a solvent.

21. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is an oral agent.

22. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is an agent for external use.

23. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is a suppository.

24. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is an ophthalmic solution.

25. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is a liquid solution.

26. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is an ointment.

27. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is a gel.

28. The resolvent composition according to any one of claims 16 to 20, wherein a formulation of the resolvent composition is a patch.

Related Paragraphs

[0012] However, since many analgesic anti-inflammatory agents have high crystallinity and poor solubility, the growth of crystals occurs temporally, and thus a drug is not fully absorbed into the living body. However, there are problems concerning the pharmaceutical formulations.

[0019] Although an analgesic anti-inflammatory agent comprises a plurality of drugs with high crystallinity, which don't easily melt into water and an oil at high concentration, the present invention provides a resolvent composition for sparingly soluble medicines which transparently dissolves these medicines at high concentration.

[0020] That is, the following resolvent compositions for sparingly soluble medicines according to the present invention may be used to attain the above-mentioned objects.

[0022] The resolvent compositions for sparingly soluble medicine comprises at least one oil ingredient having the polarity, selected from lactic acid alkyl ester, dibasic acid alkyl ester, polyhydric alcohol alkyl ether, acylated amino acid, fatty alcohol, and fatty acid (according to the second embodiment of the present invention).

[0034] Lactic acid alkyl ester is preferably ester of lactic acid and fatty alcohol having 4 to 18 carbon atoms.